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The 2002 Missouri School District Computing Census

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District Level Reports

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Email: [Education Technology](#)
Phone: 573-751-8247 Fax: 573-522-1134
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Introduction

The Census of Technology (COT) is designed to assess Missouri's continuing investment in K-12 education technologies and to help guide forward efforts. It provides important data to share with state and national decision-makers to increase public awareness and advance public policy and support for education technology. It provides local school districts with data to help identify needs and develop strategies to facilitate school improvement processes.

The COT has been collected annually since 1997. Prior to 2001, the Department of Elementary and Secondary Education (DESE) contracted with the University of Missouri's Office of Social and Economic Data Analysis (OSEDA) to administer the project. In 2001, the census was incorporated into the April cycle of the Department's online core data collection system. The 2001 COT was the first to be completed by all districts; data collected prior to 2001 were adjusted to estimate the entire population.

Different software was used to collect data in 2002, and the Department, unexpectedly, was not able to prepopulate the data cells. Contacts needed to enter all data anew, which resulted in a substantial delay in the completion of the forms. And, in some cases, this meant COT completers needed to collect all new information. Rather than just updating certain fields, as they had in the past, many users stated that they decided to take a new look at all the data being collected. This may account for some changes in the trend data.

The COT has two parts: a district-level census and a building-level census. Information is to be completed based on the census date of March 1. The submission deadline date is April 15. The District Census assesses the levels of planning and training for the district as a whole and concentrates on hardware, software, and levels of connectivity for the administrative buildings and offices. Completed by district-level administrators and/or technology specialists, the District Census includes information for all Missouri school districts (524). The Building Census assesses planning and training needs for individual school buildings and focuses on hardware and levels of Internet connectivity in computer labs, libraries, and classrooms. Completed by building-level administrator or technology contacts, the 2002 Building COT includes information for 2,128 public schools. Exempted buildings include preschools and juvenile centers.

This 2002 Missouri Census of Technology Report arranges the data for both the district and building levels according to the following areas: technology planning, technology professional development, hardware and support, Internet connectivity / distance learning, technology usage, and technology funding. Where feasible and appropriate, this report presents and compares information from previous years. Aggregated responses for the district and building census forms are provided in Appendix A and B, respectively.

This report is one of several documents that examine the use and effectiveness of

education technologies in Missouri. Other evaluative information can be found in the Missouri Education Technology Strategic Plan and annual status reports, eMINTS Program research studies, annual technology program reports, project descriptions and annual evaluation narratives, and a series of *Newsline* articles.

For additional information regarding the Census of Technology, contact the Instructional Technology section by telephone (573-751-8247) or email (instrtech@mail.dese.mo.gov).

DESE 3370-4 6/03

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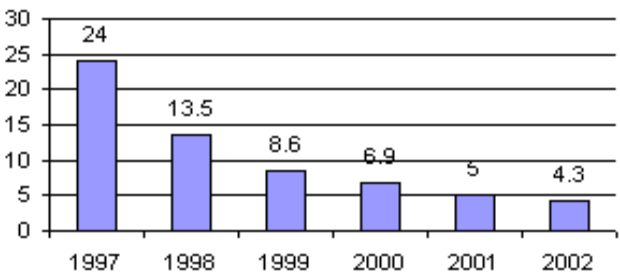


The 2002 Missouri School District Computing Census Executive Summary

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The 2002 Census of Technology shows that Missouri schools have come a long way in providing education technologies to administrators, faculty, staff, and students. More classrooms are wired, more schools are connected, and students-to-computer ratios have decreased. More importantly, more administrators, teachers, and students are using technology in meaningful ways.

Students per Internet-Connected Computer, 1997-2002

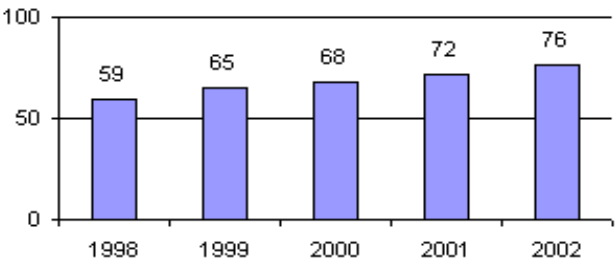


- ▶ Of the 55,142 classrooms reported in Missouri public schools, 92% or 50,923 are wired for the Internet – up from 84% in 2001, 82% in 2000, 74% in 1999, and 56% in 1998.
- ▶ Of the 2,128 school buildings that completed surveys, 97% report connections to the Internet.
- ▶ There are 3.8 students per computer (overall), 4.2 students per Internet-capable computer, and 4.3 students per Internet-connected computer.

The proportions of teachers, technology staff, and principals estimated to have intermediate and/or advanced technology skills have increased incrementally each year.

- ▶ The percent of teachers estimated to have intermediate and/or advanced technology skills is 76% in 2002 – up from 59% in 1998.
- ▶ The percent of principals estimated to have intermediate and/or advanced technology skills is 82% – up from 65% in 1998.

Teachers with Intermediate and Advanced Skills, 1998-2002



- ▶ The percent of technology staff with intermediate and/or advanced skills is 96% – up from 76% in 1998.

Below is a shortened list of some of the 2002 COT results.

Technology Planning

District Technology Plans

- ▶ 515 districts (98.3%) report having an up-to-date, state-approved technology plan
- ▶ 95% of the plans address software and staff training; over 90% address hardware/ peripherals and equipment maintenance; and, 85-90% cover internal connections and curriculum integration
- ▶ 85% or more of the districts indicate that superintendents, teachers, technology staff, and principals are all involved in district decision making regarding technology acquisition and use; 80-84% of the districts involve library media specialists
- ▶ 512 districts (98%) have a technology component in their comprehensive school improvement plans (CSIP)

School Building Technology Plans

- ▶ 1,819 school buildings (85%) have building technology plans; 1,783 (84%) buildings are included in district plans
- ▶ Over 80% of the building technology plans address hardware/peripherals and staff training; over 70% also address software, curriculum integration, and equipment maintenance
- ▶ Over 80% of buildings report that the principal, technology committee members, and teachers are all involved in developing, implementing, and evaluating the building's technology plan; 73% also include the library media specialist
- ▶ 1,983 buildings (93%) report having their own CSIP, with 90% of these plans having technology as a component of the CSIP

Technology Professional Development

Technology Staff

- ▶ 83% of districts have district staff responsible for technology maintenance / support; 64% use the assistance of outside vendors, and 53% use school certified staff
- ▶ 63% of buildings report that district staff are responsible for the technical training and/or support of the building staff and 63% report the involvement of school certificated staff
- ▶ An average of 3.71 district staff FTE and 1.17 building-level staff FTE are responsible for all training and support
- ▶ 62% of buildings have board-approved education technology standards: 59% have locally-developed standards, 59% have standards for elementary students,

54% for middle/junior high students, 49% for high school students, 45% for teachers, 43% for school administrators, and 40% for school support staff

Training Priorities

- ▶ 70% of districts rank curriculum integration and 60% rank instructional integration as top technical assistance priorities
- ▶ 58% of buildings rank curriculum development as the top training priority, followed by instructional delivery / instructional technology at 56%, Internet applications at 45%, and basic computer operations at 42%
- ▶ 53% of buildings rank curriculum development as the top training priority for support staff, followed by technology planning (36%) and LAN applications (31%)
- ▶ 43% of buildings employ a technology director or coordinator
- ▶ On average, schools schedule about two days for professional development activities when teachers can learn or upgrade their technology skills

Technology Skills

- ▶ 87% administrative / district office staff have intermediate (65%) or advanced (22%) skills in the use of technology
- ▶ 82% of principals have intermediate (60%) or advanced (22%) skills
- ▶ 76% of teachers have intermediate (58%) or advanced (18%) skills
- ▶ 96% of technology support staff have intermediate (30%) or advanced (66%) skills

Hardware and Support

District Hardware

- ▶ District administrative/office staffs use 23,399 computers, of which 90% are PCs or PC-compatible and 10% are Apple/Mac machines
- ▶ Of the PC-compatible computers, 73% run on Windows, 10% on Novell, and under 1% on Unix/Linux; 61% of the Apple/Mac machines operate on OS 9.x or higher
- ▶ In the next two years, districts estimate purchasing (for district-wide use) 59,516 computers, 13,216 computer upgrades, 1,451 interactive whiteboards, and 1,776 projectors

Building Hardware

- ▶ 232,808 computers are available to all building staff; 211,382 (91%) of the computers are located in classrooms, computer labs, and library media centers (LMC)
- ▶ 80% of all computers and 81% of instructional computers are PC/PC-compatible
- ▶ Approximately 190,000 of the computers (82%) are multimedia equipped and with 92% of them located in instructional rooms
- ▶ Of the PC-compatible computers, 98% run on Windows (predominantly Windows 95 and 98) and 14% use Novell (mostly Novell 5.x); 49% of Apple/Mac computers operate on OS 9.x or higher
- ▶ Of the 60,593 classrooms, computer labs, and LMCs, 51% have telephone access, 93% are wired for the Internet, 85% have multimedia-equipped computers, 80% have one or more multimedia computers with a direct Internet connection, and 20% have a teacher workstation that includes an Internet-connected computer,

printer, and projection device

- ▶ 91% (187,031) of the 205,068 Internet-connected computers are located in instructional rooms

Building Support

- ▶ 90% of buildings indicate that district staffs are responsible for technical maintenance / support; while 49% also use outside vendors, and 43% involve school certificated staff
- ▶ 1,335 building-level FTE are responsible for technical support, averaging .63 per building

Internet Connectivity – Distance Learning

Internet Connectivity

- ▶ 93% of the district administrative buildings/offices have a direct link to the Internet, with T1 or better bandwidth capacity in over 86% of the offices
- ▶ 97% (2,062) buildings have access to the Internet, with 1,941 of these buildings having a direct connection

District and Building Networking

- ▶ 459 district offices (88%) have a local area network (LAN), with Novell as the predominant server software in use, followed by Windows NT, and Apple Share
- ▶ 1,926 buildings (91%) have a local area network (LAN)
- ▶ 1,528 buildings (72%) are connected to district wide area networks (WAN)
- ▶ 239 buildings participate in distance learning through interactive television (I-TV), 205 through desktop (Internet-based) technologies, and 163 via satellite

Internet Usage Policies

- ▶ 92% of districts require parent signatures before students can access the Internet: 84% of elementary, 88% of middle school / junior high, and 78% of high school parents
- ▶ 1,806 buildings (85%) require parent signatures before students can access the Internet
- ▶ Approximately 79% of students have signed Internet acceptable use policies
- ▶ 1,734 buildings (81%) use filtering software on Internet-connected computers

Technology Use

District Technologies

- ▶ 463 districts (89%) incorporate technology into curriculum guides
- ▶ 16% of districts have student technology proficiency requirements
- ▶ 67% of districts post school calendars on district websites, 64% post district staff; 49% list school board members, and 51% post annual reports of school district data -- only 23% post student work and 18% post district curriculum
- ▶ 380 districts (74%) employ an instructional technology specialist
- ▶ Districts employ an average of 3.89 FTE responsible for training and supporting

teachers to integrate technology: 2.05 district-level staff and 1.84 school-level staff

- ▶ Districts provide email accounts to 7,109 administrators, 61,535 teachers, and 49,794 students
- ▶ Districts estimate that 86% of 6th graders are able to perform basic computer operations
- ▶ 71% of districts have installed their own email servers, 63% have web servers, 70% have firewalls, and 46% have proxy servers

Building Technologies

- ▶ Buildings report the following routine use of technology, by application and user type

Application	Principals	Teachers	Students
Software	36%	71%	75%
E-mail	92%	82%	14%
World Wide Web	86%	82%	63%
EBSCO host database	24%	31%	27%
Electronic encyclopedia	19%	38%	41%
Automated Library Card Catalog	23%	46%	52%

- ▶ Buildings estimate the following routine uses of technology, by function and user type

Function	Principals	Teachers	Students
Computer-generated presentations	43%	37%	32%
Writing assignments	67%	71%	65%
Research information collection	69%	67%	59%
Communicate with parents	63%	53%	7%
Lesson plan preparation	14%	59%	Na
Spreadsheet/database (student records)	71%	56%	Na
Track student performance	67%	61%	Na
Assess Student Performance	58%	55%	

Communicate with DESE staff	62%	22%	Na
Instructional delivery/presentation	28%	38%	Na

- ▶ 68% of buildings indicate the technology coordinator is responsible for the leadership and support of teachers in integrating technology, followed by school administrators (65%), library media specialists (43%), and instructional technology staff (31%)
- ▶ Buildings estimate that 44% of the teaching staffs are able to fully integrate technology into the curriculum
- ▶ 948 buildings (45%) use a technology-mediated feedback system such as email (822), voice mail (546), and homework hotline (211)
- ▶ 90% of Internet-connected computers run Acrobat Reader 4.x or higher

Technology Funding

District Technology Spending

- ▶ For 2001-2002, districts projected technology expenditures of \$84,062,539
- ▶ Districts project spending \$65,755,823 next fiscal year, with less money being spent on hardware and software and more funds spent on professional development, connectivity, and distance learning
- ▶ 337 districts (65%) applied for e-rate discounts for FY01 expenditures, estimating \$50.7 million in savings
- ▶ 18% of districts purchased technology products or services via the Missouri prime vendor contract

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The 2002 Missouri School District Computing Census District Census Report

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This section of the Census of Technology Report analyzes this year's data, compares the 2002 data with previous years' data, and notes interesting trends or anomalies. All 524 Missouri school districts completed the Census of Technology in 2002. Predominantly, the 2002 COT data indicate continued improvement over the previous year(s). A copy of the survey, completed with aggregate data, is provided as Appendix A.

Technology Planning

A school district's long-range technology plan provides a road map for how the district will implement strategies that promote the district's mission, advance its comprehensive school improvement plan (CSIP), and improve teaching and learning. Items 1 and 3 asked if districts have technology plans and, if so, whether they are state approved or aligned with local school improvement plans.

The Department of Elementary and Secondary Education began approving technology plans in 1997 as a requirement for the E-rate program. Early district technology plans dealt mostly with hardware and equipment and did little to address integration, student learning, or technology professional development. Beginning in 1999, a state-approved technology plan became a requirement for participation in the technology acquisition (TAG) grant program and/or the MOREnet Technology Network Program. Districts were granted a one-year waiver to allow time for the development of new or substantially updated plans. As such, all but a few districts had state-approved plans by 2000.

In 2001, with the passing of the federal No Child Left Behind Act, the state developed a new state education technology strategic plan and a district technology planning web site and updated its scoring criteria to assist schools in developing plans that would promote effective teaching strategies and student achievement as well as adequate infrastructure. The new criteria were implemented in 2002 and districts were again given a one-year waiver to prepare. That waiver expires in June 30, 2003. As a result, the 2003 COT will not address district plans.

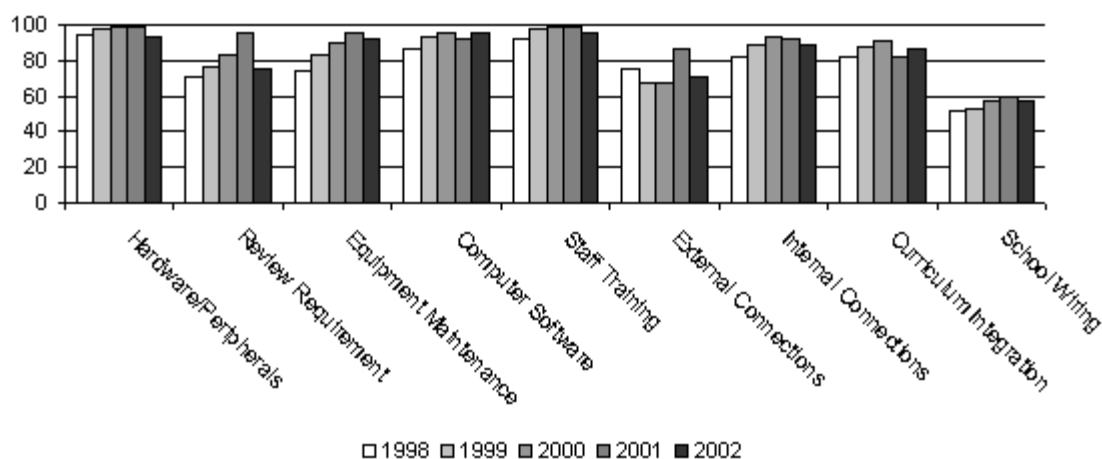
Table 1 indicates the ebb and flow of district technology planning, 1997 through 2002.

Table 1

Status of District Technology Plans, 1997-2002						
	1997	1998	1999	2000	2001	2002
Districts With a Technology Plan	94%	93%	96%	99%	99.7%	98.3%
Districts with State-approved Plan	NA	71%	82%	89%	96.2%	97.9%
Districts with Technology in CSIP	NA	92%	95%	96%	97.9%	97.7%

Figure 2 illustrates the components covered in district technology plans, 1998 through 2002. By 2002, nearly all district plans covered hardware review standards and equipment maintenance, staff professional development, computer software, and curriculum integration.

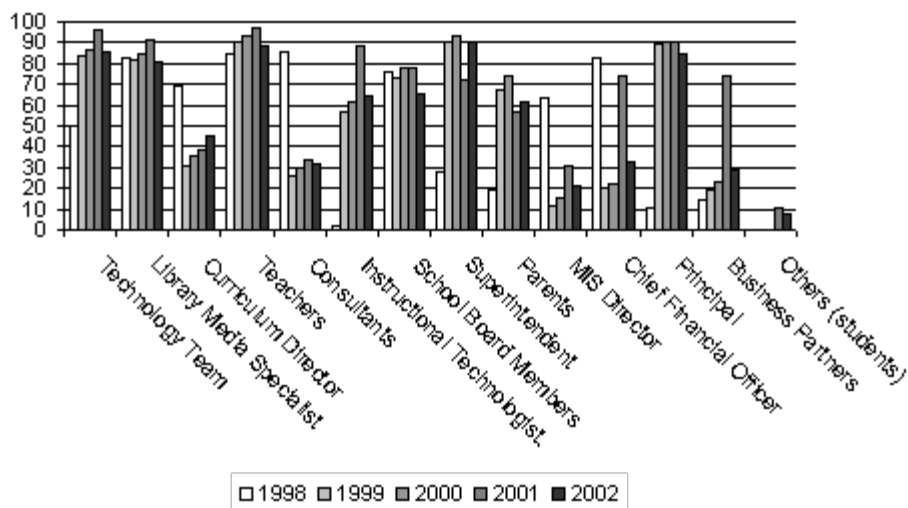
Figure 2



Item 2 asked districts to indicate who makes technology-related decisions for the district, in terms of technology acquisition and use. Figure 3 indicates a movement toward giving more decision-making responsibilities to instructional staff, less to chief financial officers and consultants, and involving a wider spectrum of stakeholders. While district superintendents continued to be involved at a high rate, an increasing number of curriculum staff, technical staff, classroom teachers, and parents play important roles in education technology planning.

Figure 3

District Decision Makers for Technology Acquisition and Use, 1998-2002



Item 4 asked whether districts partner with business or higher education to help support technology initiatives. The number of districts that report having a technology partner has fluctuated the past four years, as indicated in Table 4. The reporting of the types of partners is more consistent. A district "technology" partner is most likely a college or university, then a technology-related business, followed by a local business that is not technology-related.

Table 4

Districts With a Technology Business or Higher Education Partner, 1998-2002

	1998	1999	2000	2001	2002

Technology Professional Development

Five items of the District-level COT addressed training issues. Item 5 asked who is responsible for the technical maintenance and support in the district; item 6 asked districts to prioritize the training needs of those responsible; and items 7 and 8 address technology skills. Item 7 asked whether teachers are required to demonstrate technology skills for employment or continued employment, and item 8 asked about the technology skill level of district administrators.

Table 5 indicates that districts are engaging more people to handle technical maintenance and/or support of hardware in the districts. As more technology is acquired and more educators are using the technologies, it creates a need for greater technical support. Over 60 percent of the districts involve district staff and/or outside vendors to help with equipment maintenance and support. In 2002, districts predominantly used staff. The percentage using outside vendors dropped from 78 percent to 64 percent -- the lowest rate since 1998.

Table 5

Persons Responsible for District Technical Support, 1998-2002					
Persons Responsible	1998	1999	2000	2001	2002
District Staff	70%	73%	77%	83%	83%
Outside Vendors	65%	69%	72%	78%	64%
School Certified Staff	44%	51%	56%	61%	53%
School Classified Staff	15%	17%	20%	27%	26%
Contractors	22%	22%	24%	27%	21%
Students	10%	13%	17%	21%	17%
Parents	3%	5%	4%	4%	3%
Regional Centers / RPDCs	2%	3%	3%	6%	5%

Table 6 lists the training priorities for the persons responsible for equipment maintenance and support. It is interesting to note that, while all the percentages dropped in 2002, classroom use of technology continued to be top priority. Curriculum and instruction integration have consistently been the top priorities for the majority of districts but now there is a 40 percent drop from these categories to the next highest categories, technology planning and networking.

Table 6

Top Training Priorities, 1998-2002					
Training Type	1998	1999	2000	2001	2002
Instructional Integration	57%	73%	78%	78%	69%
Curriculum Integration	65%	72%	77%	78%	70%
Networking	47%	45%	43%	46%	39%
Technology Planning	31%	44%	44%	45%	39%
Information Systems	17%	33%	35%	33%	26%
Basic Operations	Na	33%	31%	30%	25%
Procurement	28%	24%	24%	25%	21%
Budget Planning	20%	20%	20%	22%	20%
Community Awareness	17%	19%	20%	20%	17%

Items 7 through 9 deal with district technology standards and the estimated skill levels of current administrators. Item 7 was added to the 2002 COT to address district technology standards for students, teachers, and administrators.

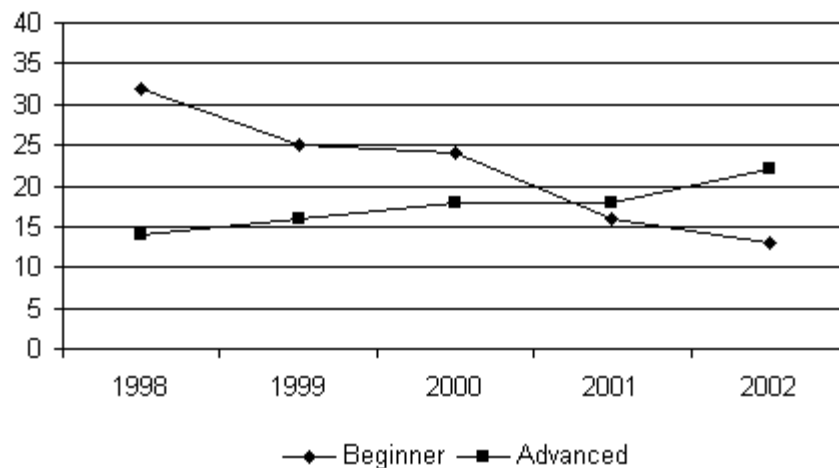
Approximately three in five districts have board-approved technology standards. Over 300 districts reported they have locally-developed standards, while 100 report adopting or adapting national standards such as those developed by the International Society for Technology in Education (ISTE) and International Technology Education Association (ITEA). Districts are most likely to have established standards for elementary students (307 districts), then middle/junior high students (283), followed by high school students (258). Districts are more likely to have standards established for teachers (237) than for administrators (223) or support services staff (210).

While nearly half of the districts have board-approved technology standards for teachers, responses to item 8 indicate that only nine percent of districts require teachers to demonstrate technology skills for hiring and continued employment decisions. This rate has hovered at or near eight percent since 1998.

Item 9 asked districts to estimate technology skills levels of administrators in the district offices. In 1998, about 67 percent of district-office administrators were estimated to have intermediate and advance technology skills. The percentage rate has increased yearly, with districts reporting an 87 percent rate in 2002. On the flip side, the percentage of administrators rated as beginners has decreased yearly. The contrast between the decreasing percent of “beginners” and the increasing percent of “advanced” is illustrated in Figure 7.

Figure 7

Administrators with Beginner and Advanced Technology Skills, 1998-2002



Hardware and Support

Items 10 through 15 ask district administrators to estimate the number of persons responsible for technical support, list the kinds of computers located in the administrative offices, and estimate the number of computers likely to be purchased in coming years – for both administrative offices and school buildings.

Item 10 asked items about technology staffing. Since 1999, districts have been consistently reporting an average of 2.0 district-level staff and a little over 2.0 building-level staff responsible for hardware maintenance and support. It isn't likely that all districts have these same numbers; rather, these averages level the districts with little or no technology staffs and those districts with one or more technology staff person in each building. In 2002, districts reported 1.88 district-level FTE and 1.63 school FTE.

Table 8 notes an annual increase in the overall numbers of computers and kinds of computers housed in administrative offices. The proportion of high-end machines also increased each year, as did the proportion of PCs to Apple/Mac computers. While the number of Apple/Mac machines increased in 2002, the proportion of all machines has dropped. Windows is the predominant operating system for PC/PC-compatible machines, followed by Novell. Of the Apple/Mac computers, 82 percent have operating systems of OS 9.0 or higher.

Table 8

Administrative Office Hardware, 1998-2002					
	1998	1999	2000	2001	2002
Total Number of Personal Computers	8,227	11,558	14,788	17,523	23399
Number of PC/PC-Compatible Machines	6,371	9,826	12,944	15,646	20985
Number of Apple/Mac Machines	1,856	1,732	1,844	1,877	2414
Percent PC-Compatible 586/Pentium or higher	59%	76%	88%	94%	93%
Percent Apple/Mac 68040 or higher	55%	72%	81%	82%	95%
Percent PC-Compatible	77%	85%	88%	89%	90%
Percent Apple/Mac	23%	15%	12%	11%	10%

District estimates of how many computers will be purchased in coming years continue the trends noted above. Districts expect to purchase increasing numbers of machines for the administrative offices, as well as computers, interactive whiteboards, and projectors for school buildings.

Internet Connectivity and Distance Learning

Items 16 through 21 ask about the administrative office's capacity to interact with others through Internet, networking, and distance learning technologies. Table 9 shows the steady increase in the percentage of administrative offices connected to the Internet, a local area network (LAN), a wide area network (WAN), and that are equipped for two-way videoconferencing. There was a noted increase in the number of offices connected to WAN from 2001 to 2002.

Table 9

Administrative Office Connectivity/Networking, 1998-2002					
District/Offices	1998	1999	2000	2001	2002
▶ Dedicated Internet Connection ¹	68%	85%	92%	96%	93%
▶ Connected to Local Area Network	77%	82%	86%	90%	88%
▶ Connected to District Buildings by a Wide Area Network (WAN)	34%	46%	53%	57%	60%
▶ Buildings connected to WAN	Na	Na	Na	Na	86%
▶ Equipped for Two-way Interactive Audio/Video Communications	5%	7%	7%	8%	8%
▶ Equipped for Full Motion Video	12	26	23	28	30
▶ Equipped for Compressed Video	7	12	13	15	13
▶ Equipped for Two-way Interactive Video and Audio	10	38	55	69	68
▶ Require Parent Signatures for	49%	68%	76%	82%	92%

¹ The 2002 COT was revised to ask for "dedicated" connection while previous COT asked about "direct" connection.

Technology Usage

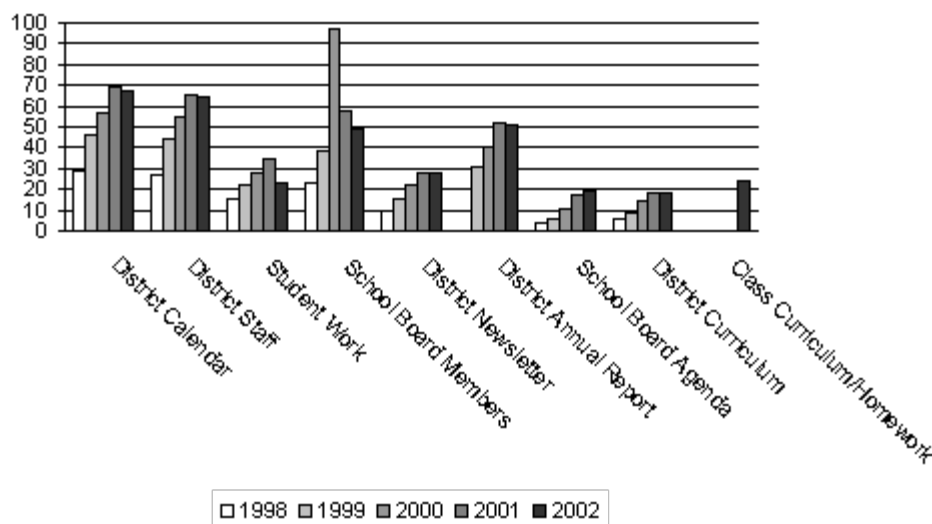
Items 22 through 32 deal with district-wide technology use. Item 22 asked districts whether technology is incorporated in district curriculum guides and academic standards. In 2002, 89 percent of the districts responded that technology was addressed in curriculum guides, as compared to 88 percent in 2001, 81 percent in 2000, 73 percent in 1999, and 63 percent in 1998. Over 60 percent of the core content areas have technology incorporated.

Item 22 also asked if districts had technology proficiency requirements for students to pass to the next level. Only 15 percent of districts in 2002 indicated they had such a requirement, which is slightly lower but still consistent with the three previous years, with percents that ranged from 16 to 18 percent.

Figure 10 indicates information available on the district web sites. There has been a steady increase in almost every information category over the last four years. Increasingly, more districts are maintaining their own web sites and posting a higher quantity and greater diversity of information. Asked for the first time in 2002, about one in four districts reported posting classroom curriculum and homework information.

Figure 10

Information Available on District Web Sites, 1998-2002



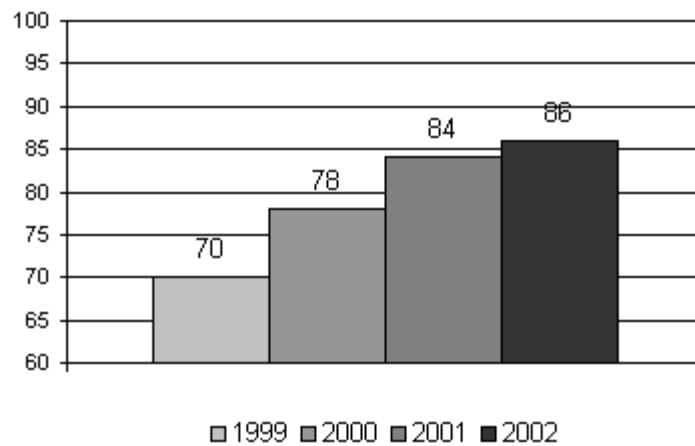
Items 24 and 25 asked districts to estimate the staff responsible for the training and support of teachers in integrating technology into curriculum and instruction. Approximately three in four districts employ a technology director or coordinator. In keeping with past statistics, districts averaged approximately two district-level staff. This year, districts estimate almost two full-time building-level staff.

Responses to item 26 indicated that over 7,100 administrators, 61,00 teachers, and nearly 50,000 students were provided email accounts in 2002. Except for the administrator category, the 2002 numbers are higher than data reported in 2001.

Figure 11 shows a steady increase in the percentage rate of 6th grade students estimated to be computer literate, as asked by item 27. Computer literacy, in this case, means the student is able to perform basic computer operations.

Figure 11

Computer Literate Students – Grade 6, 1999-2002



Responses to item 28 are reported in Table 12. Data indicate a steady increase in the percentage of districts installing their own email, web, and proxy servers, and firewalls. In 2002, Groupwise, Mercury, Pegasus, and MS Exchange or Outlook were the predominant email server; Apache, MS FrontPage, Enterprise, and IIS the most used web servers; and, Border Manager the primary firewall.

Table 12

District Servers, 1999-2002				
	1999	2000	2001	2002
Email Server	60%	67%	73%	72%
Web Server	52%	59%	65%	64%
Proxy Server	28%	36%	43%	46%
Firewall	39%	48%	57%	71%

Technology Funding

Items 33 through 36 asked districts about their technology budgets and expenditures. From 1999 to 2002, districts have reported technology expenditures totaling \$60 to 64 million. Table 13 indicates total projected and actual expenditures for major budget items, for fiscal years 2000, 2001, and 2002.

Table 13

Technology Budgets and Expenditures, 2000-2002						
Technology Budget Items	FY 2000		FY 2001		FY 2002	
	Projected: 2000 COT	Expended: 2001 COT	Projected: 2001 COT	Expended: 2002 COT	Projected: 2001 COT	Estimated: 2002 COT
Hardware / Equipment	\$39,103,432	\$42,050,485	\$43,835,991	\$40,900,483	\$39,206,409	\$49,353,122
Instructional Software	5,525,287	5,809,475	6,481,647	5,715,504	6,193,943	5,743,140
Professional Development	4,295,815	4,229,137	4,379,409	4,295,303	4,544,669	5,360,525

Internet Charges	1,505,177	1,575,164	1,509,878	1,510,112	1,514,324	1,589,346
Distance Learning	2,314,206	1,987,733	2,481,296	2,104,837	2,377,102	1,938,977
Server / Support	8,013,192	7,839,798	8,740,757	8,153,149	9,180,776	9,355,309
Other		342,104	1,586,870	3,123,583	1,466,997	10,722,120
Total	\$60,757,109	\$63,833,896	\$69,015,848	\$65,802,971	\$64,473,220	\$84,062,539

Item 34 asked districts to estimate what percentage of the overall technology budget supports technology professional development. Since 1998, professional development has ranged six to seven percent of the total technology budget. The 2002 figures reported in Table 13 indicate that districts, on average, spent \$5.3 million on professional development, which is roughly six percent of the total technology budget.

Items 35 and 36 asked districts if they participate in the Universal Service Fund's E-rate program and/or purchase technology products and services from the state's vendor contract. While 513 districts participate in the E-rate program via their MOREnet connection, roughly only two-thirds of districts file separate applications for discounts. The discounts generated from these 337 applications were estimated to total \$50,706,062, and average just over \$150,000 per district. Interestingly, most districts used the savings to support non-technology related activities and expenditures, rather than use the funds to leverage more technology.

Typically, very few districts report making use of the state vendor contract from year to year. However, this has rate jumped from 8 percent in 2000, to 11 percent in 2001, and to 18 percent in 2002. The increase can likely be attributed to two causes. The eMINTS program has purchased hardware, software, and support from the state vendor. New eMINTS districts must purchase the equipment on their own and are encouraged to consider using state contract vendors. In the spring of 2002, the Department contracted with the state's prime vendor to help districts become compliant with mandates set forth by the Children's Internet Protection Act (CIPA). Through the contract and volume purchasing, the state was able to offer filtering software solutions at very affordable pricing.

Missouri Department of Elementary and Secondary Education
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The 2002 Missouri School District Computing Census Building Census Report

[Back to 2002 Census](#)

The 2002 Census of Technology collected data from 2,128 school buildings. In general, the 2002 building-level data continue the improvement trends noted over the years. Except for a slight dip noted for some items in 2001 and 2002, with 100 percent of all schools completing the COT forms, building-level statistics show continued progress over the past five years. A copy of the survey, completed with aggregate data, is provided in Appendix B.

Technology Planning

A school building long-range technology plan, like a district plan, should provide a road map to help the school implement strategies that promote the district's mission, advance district and building improvement plans, and improve the teaching and learning occurring in the building. Items 1-4 asked about the status of technology planning and implementation in each school building. Items 1 and 3 asked if buildings had stand-alone technology and comprehensive school improvement plans (CSIP). Item 1 also asked who was involved in developing the building technology plan, while item 2 dealt with who was involved in implementing and evaluating the plan. Item 3 also asked if technology is a component in the building's CSIP. Item 4 pertained to school partners in supporting technology.

Table 1 indicates the percentage of school buildings that have technology plans and school improvement plans, and the percentage of building plans included in district plans. In 2002, 85 percent of the school buildings indicated having their own technology plans as opposed to only 69 percent in 1998; 93 percent report having a building CSIP compared to 89 percent in 1998.

Table 1

Status of Building Technology Plans, 1998-2002

	1998	1999	2000	2001	2002
Building has a Technology Plan	69%	83%	86%	84%	85%
Plan is Part of the District Technology Plan	64%	96%	97%	86%	84%
Building has a CSIP	89%	95%	97%	85%	93%
Technology is a Component in the CSIP	69%	99%	99%	72%	96%

Table 2 lists the technology components addressed by building technology plans in rank order. While the overall rankings of the components have changed little in five years, the percentages have increased substantially since 1998. The top three components consistently are hardware, training, and software. In 2002, four of five building plans address these components. Three of four plans also address curriculum integration and equipment maintenance. In 2001, only eight percent of plans dealt with assistive technology, compared to 29 percent in 2002. The technology plan components that show the greatest increase over the past five years include: equipment maintenance (by 29 percentage points), curriculum integration (23 points), training (21 points), and assistive technology (21 points).

Table 2

Building Technology Plan Components, 1998 and 2002

Technology Component	1998		2002	
	Rank	Percent	Rank	Percent
Hardware and Peripherals	1	63%	1	82%
Staff Training	2	60%	2	81%
Computer Software	2	60%	3	79%
Curriculum Integration	4	53%	4	76%
Equipment Maintenance	6	46%	5	75%
Internal Connections	5	48%	6	66%
Review Requirements	8	40%	7	55%
External Connections	7	42%	8	48%
Electrical Wiring / Capacity	9	33%	9	43%
Assistive Technology	-	-	10	29%

Table 3 indicates who was involved in making decisions at the building level, in 2002, in terms of technology acquisition and implementation. Since 1998, buildings increasingly involve a more diverse body of decision makers, and represented by more instructional staff. Early COT data indicated principals and teachers mainly made these decisions, with little or no representation of the student body, parents, or the community. While principals and teachers remain highly involved in the decision-making, about nine in ten buildings have technology team members; three in four involve the library media specialist; and, about half of the buildings have an instructional technology contact and involve parents. Students are increasingly involved in technology planning: in 2002, seven percent of the buildings had students involved as compared to five percent last year.

Table [c1] 3

Persons Involved in Developing, Implementing and Evaluating
Building Technology Plans, 1998 and 2002

Representative / Group	1998		2002	
	Rank	Percent	Rank	Percent
Principal	1	58%	1	89%
Teachers	1	58%	3	85%
Technology Team	3	56%	2	87%
Library Media Specialist	4	48%	4	73%
Parents	5	36%	6	53%
Instructional Technology Contact	6	25%	5	55%
Business Representative	7	17%	8	32%
Curriculum Staff/Consultant	8	11%	7	42%
Students	-	-	9	7%

Item 4 asked about school building partnerships with business or higher education that help support district and/or building technology initiatives. While only one in four buildings reported having a technology partner in 2002, this is markedly higher than the six percent reporting having partners in 1998. Still, the 2002 figure is lower than the 29-30 percent that was reported consistently between 1999 and 2001. This drop might be due, in part, to worsening economic conditions across the state. Table 4 indicates the type and frequency of building partners reported for 2002.

Table 4

Building Technology Business or Higher Education Partners

	Number Buildings
Building Partners in 2002	
College/University	256
Business – Technology Related	167
Business – Other	113

Technology Professional Development

Ten items on the building-level COT addressed training issues. Items asked buildings to detail the kind and number of staff responsible for staff development, the priority training needs for building technical and instructional staff, the kinds and hours of training available to staff, and the technical skills of staff.

Items 5-7 asked who is responsible for the technical training and support of building staff, if the building employed a technology director, and the number of staff available. Table 5 indicates those responsible for technical training, 1998 through 2002. Data indicate a trend of relying more on district staff and less on outside vendors. While only 43 percent of the buildings employed a technology director, in 2002, there was a marked switch from relying on district staff to using school-level staff to provide building-level technical support. In 2001, over 90 percent of buildings reported that district staff provided technical support, compared to only 44 percent of buildings in 2002.

Table 5

Persons Responsible for Technical Support, 1998-2002					
Persons Responsible	1998	1999	2000	2001	2002
District Staff	77%	82%	88%	91%	44%
Outside Vendors	53%	32%	39%	48%	39%
School Certificated Staff	48%	51%	63%	68%	63%
School Classified Staff	24%	24%	29%	33%	34%
Contractors	17%	11%	15%	16%	12%
Students	7%	5%	6%	7%	8%
Parents	3%	3%	3%	4%	2%
Regional Centers / RPDCs	2%	12%	14%	19%	16%

While buildings report relying less on district staff to provide technical support, the average district-level FTE has steadily increased, from 2.3 in 1999, to 3.2 in 2001, and 3.7 in 2002. The number of building-level FTE also increased, from 1.0 over the past three years to 1.17 in 2002.

Item 8 dealt with technology training needs. Figure 6 shows the shifts in priorities for school building faculty. In 1998, the priority training need covered basic computer operations. As more staff members become familiar with basic computer operations, an increasing emphasis is being placed on training that addresses how to evaluate and integrate technology resources. Figure 6 illustrates that the top three training needs in 2002 address the use of education technology in curriculum development and the delivery of instruction, and the use of Internet applications.

Figure 6

Educational Technology Training Priorities, 1998-2002

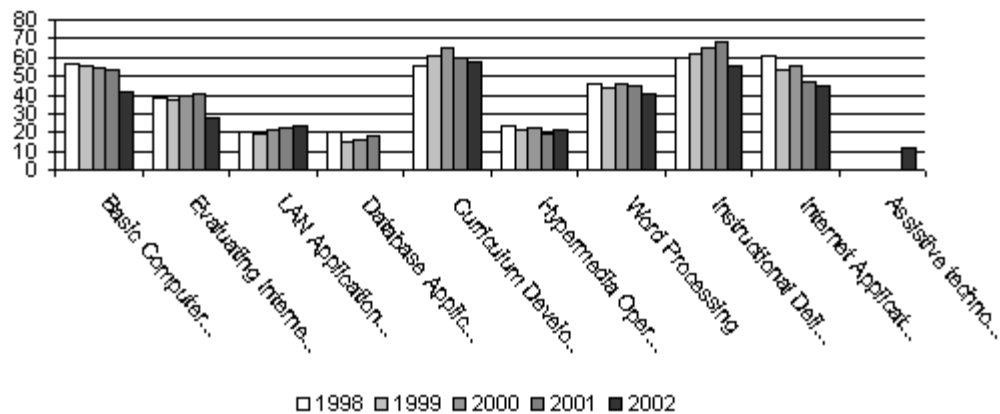
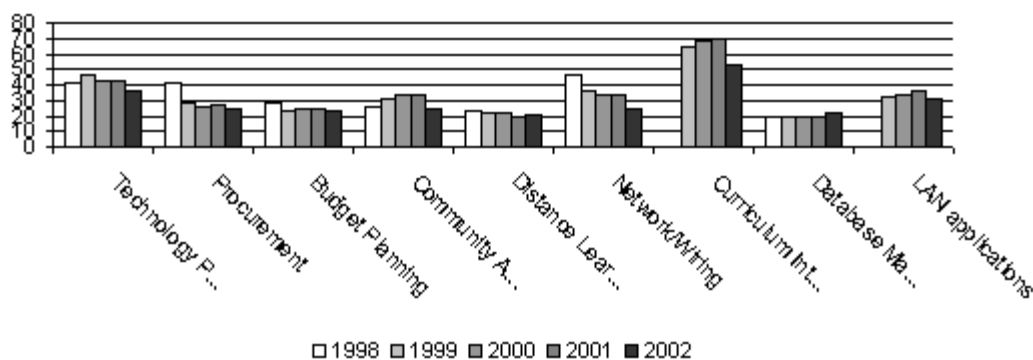


Figure 7 shows a shift in priority training needs for the building's technical support staff, as reported for item 9. Training is changing from an emphasis on basic applications to curriculum integration and more advanced LAN applications.

Figure 7

Technical Support Staff Training Priorities, 1998-2002



Item 10 asked about the number of technology professional development hours being offered to building staff and faculty. In November of 1997, the State Board of Education established policy that requires buildings to allocate amounts equal to 20 percent of state technology grant funds for technology-related training. The policy went into effect for the 1998-1999 school year.

Table 8 indicates the number of hours of training per training type and trainee; it compares 2002 responses to 1999 baseline data. Except for the number of hours administrators received training on the use of software applications and Internet resources, technology-related training hours increased for teachers and administrators across all training topics. Since 1999, COT data have indicated a steady increase in the number of training hours offered. The topics with the largest increases over time include curriculum integration for both teachers and administrators and teaching applications (instructional strategies) for teachers. The topics with the largest increase from 2001 to 2002 address teaching applications (for teachers) and using assistive technology (for both teachers and administrators). Administrator training in the use of teaching applications had the largest decrease from 2002.

Table 8

Education Technology Training Hours Offered, 1999 and 2002

Training Type / Hours	1999		2002	
	Administrator	Teacher	Administrator	Teacher

Introduction to Operations	4.2	6.3	5.38	7.64
Using Software Applications	9.9	16.3	10.77	14.70
Using Internet Resources	5.4	9.1	6.36	9.39
Curriculum Integration	4.4	8.1	7.06	10.79
Teaching Applications	3.3	7.9	6.24	8.60
Using Assistive Devices	N/a	N/a	2.09	2.75

Items 11 and 12 asked about teacher technology standards and existing skill levels. Item 12 asked building contacts to estimate the technology-related skill levels of principals and technical support staff, as well. The skill levels are described as follows:

- ▶ Beginner – basic technical skills including applications such as word-processing, some stand-alone software, and some Internet usage (email).
- ▶ Intermediate – regular use of applications, software, and Internet resources for increased productivity and the use of applications including word-processor for student writing, research on the Internet, computer-generated presentations.
- ▶ Advanced – complete integration and mastery of the technology, using it effortlessly as a tool to accomplish a variety of learning, instructional and/or management tools.

The number of buildings requiring technology skills for employment or continued employment rose from nine percent in 1998 to 17 percent in 2001. In 2002, only 70 buildings (three percent) responded yes; however, over 200 indicated they evaluate teachers via professional development participation, over 160 use hands-on evaluations, and over 100 look at technology skills during the recruitment and selection process and/or check transcripts.

Perhaps, schools feel teachers already possess needed skills, as building contacts estimate that only 24 percent have “beginner” technology skills. The proportion of teachers estimated as beginner technology users has steadily decreased from the 40 percent reported in 1999.

Likewise, the rate of principals estimated as beginners has decreased from 35 percent in 1999 to 18 percent in 2002. The rate of principals reported as advanced users has doubled from 11 to 22 percent. As expected, 96 percent of the technology support staff is considered as having intermediate and/or advanced skills.

Figure 9 illustrates the increases in the percentage of teachers and administrators rated to have advanced technology skills. Not surprisingly, technical support staff have the highest skills.

Figure 9

Building Faculty/Staff with Advanced Skills, 1998-2002

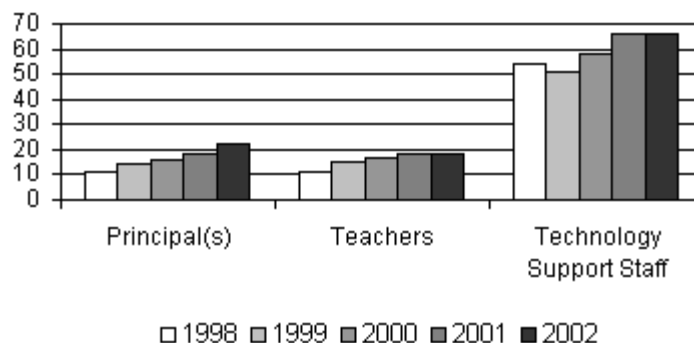
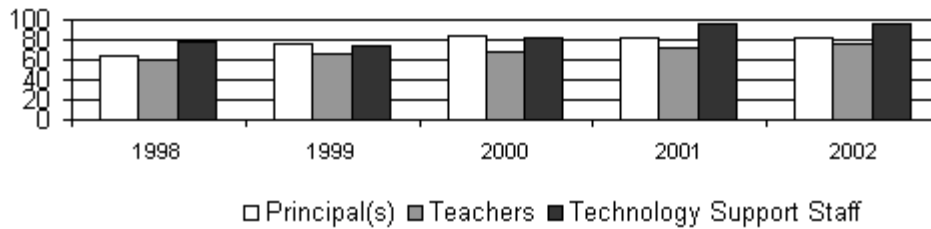


Figure 10 shows the percentage of staff at the advanced level combined with those at the intermediate level. Over 60 percent of teachers and administrators are estimated to be in this combined category.

Figure 10



Items 13 and 14 asked about the number of days scheduled for technology-related professional development activities and how this number compares to the prior year and plans for next year. The 2002 data indicate that buildings scheduled fewer days for technology-related professional development. The average number of technology training days indicated in 2002 is 1.6, as compared to 3.5 days in 1999 and 2.8 days in 2001. Further, buildings plan to continue this trend. Over half of the buildings project offering the same amount of scheduled training in 2003. In the past, over half of the buildings projected an increase in subsequent years.

Hardware and Support

In the Hardware and Support section of the 2002 Census of Technology, school buildings provided information for ten different items that range from responsibility for school building hardware to types and locations of the technologies available.

Table 11 shows responses to Item 15 about who is responsible for the technical maintenance and/or support of hardware in school buildings. Since 1999, district staff(s) have been predominantly responsible for technical support. The use of outside vendors and contractors has dropped, while the rate of buildings using school staffs (classified and certificated) has increased.

Table 11

Persons Responsible for Technical Support, 1998-2002

	1998	1999	2000	2001	2002
District Staff	70%	73%	77%	91%	90%
Outside Vendors	65%	69%	72%	62%	49%
School Certified Staff	44%	51%	56%	54%	43%
School Classified Staff	15%	17%	20%	31%	30%
Contractors	22%	22%	24%	25%	10%
Students	10%	13%	17%	11%	9%
Parents/Community Members	3%	5%	4%	3%	1%
Regional Centers/ RPDCs	2%	3%	3%	3%	2%

Figure 12 indicates the staff FTE (full-time equivalent) responsible for technical maintenance and support in the building, as reported on item 16. While the FTE increased from 1999 to 2001, data from the 2002 Census indicate a downward turn.

Figure 12

Building Technical Support FTE, 1999-2002

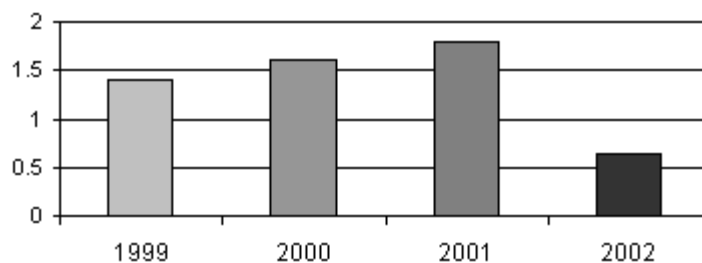


Table 13 addresses numbers of computers in school buildings, by type and location. Computers were clustered by platform and speed / capacity. Locations included: Computer Lab – a room specifically designated to computer work; Instructional Rooms – a room designated as a classroom; and, Library/Media Center – a room designated as a library media center.

A total of 232,808 computers were reported in 2002, with 46,907 Apple/Mac machines and 185,901 PC-compatible machines. Over 226,000 (97 percent) of these computers are considered capable of running the Internet at high speeds. [Computers with Pentium speeds is the minimum standard used to identify Internet-capable computers in 2002. Prior to 2002, the standard was 486 speeds or higher.] Over 90 percent of all computers are located in instructional rooms (computer labs, classrooms, and library media centers), with 97 percent of these machines considered Internet-capable.

Table 13

Numbers, Types, and Location of School Building Computers, 1998-2002 *

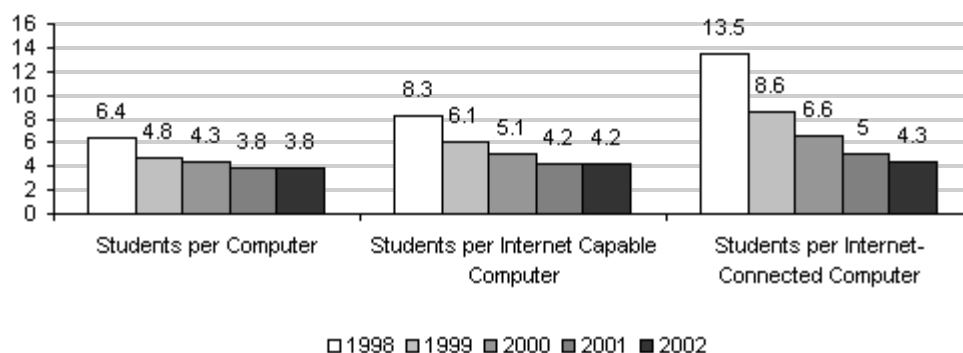
	1998	1999	2000	2001	2002
Total Number of Computers	131,777	176,150	206,864	237,115	232,808
▶ With Pentium or Higher Speeds	44%	62%	72%	86%	90%
▶ Located in all Instructional Rooms	90%	92%	91%	86%	91%
▶ Located in Classrooms	46%	48%	49%	50%	50%

* Data prior to 2001 are adjusted, to estimate the entire population.

Figure 14 indicates the ratios of students to computer, 1998 - 2002. [Ratios are determined using the COT data regarding numbers and types of computers and Core Data fall enrollment figures.] As schools purchase new computers, older computers may be relocated within or surplus out of the district. The numbers of computers in use continue to climb, resulting in a steady decline in the numbers of students per computers, overall. Likewise, ratios are declining related to the number of students per high-speed (Internet-capable) computer and Internet-connected computer. The greatest decline relates to Internet-connected computers, as more and more buildings and computers are being connected to the Internet.

Figure 14

Student-to-Computer Ratios, 1998-2002



With an increase in the number of Web-based application, training, and scoring sessions to help teachers assess MAP writing, item 18 was added to determine the size of monitors being used. Of all the monitors reported, 91 percent measured 15 inches; 17 percent measured 17 inches; and, less than one percent measured those larger than 17 inches. While these rates mirror those reported by the administrative offices, where monitors measuring 17 inches or larger amount to 92 percent, half of all the monitors in the district administrative/central offices are larger than 17 inches. [Note that this item will not be covered in the future.]

Table 15 indicates the operating systems being run by personal computers in 2002. With 79.9 percent of the computers listed as PC-compatible, Windows is the predominant operating system being used across the state. The majority of machines run on Windows 98, followed by Windows 95. Over half of the Apple / Mac computers are using OS 9.x or later. Approximately 11 percent of all computers operate on Novell and less than one percent, Unix or Linux.

Table 15

Operating Systems of Personal Computers

Operating Systems used in 2002	Number Computers	Percent Computers
Windows	183,044	
▶ Windows 95	59,030	
▶ Windows 98	100,608	32%
▶ Windows 2000/Me	16,153	55%
▶ Windows NT 4.x	2,847	9%
		2%
Mac	45,274	
▶ OS 7.x	10,466	
▶ OS 8,x	11,795	23%
▶ OS 9 or later	23,013	26%
		51%
Novell	26,235	
▶ Novell 4.x or earlier	7,956	
▶ Novell 5.x	16,561	30%
▶ Novell 6.x	1,718	63%
		7%
Unix / Linux	947	

Item 20 asked buildings to indicate the number of computers that are multimedia equipped. A multimedia computer is

defined as having a CD drive and sound card capable of running sophisticated software with graphics and sound. In 2002, there were a total of 190,353 multimedia-equipped computers, representing 82 percent of all computers reported. Over 91 percent of the multimedia machines are located in instructional classrooms, labs, and library media centers (LMC). Compared to last year, buildings report over 15,000 more multimedia computers, an increase of 11 percent. Like this year, most multimedia computers were located in classrooms, followed by computer labs, and LMCs.

Item 21 was added in 2002 to examine library automation. Only one in five buildings reported being completely automated. The top library catalog software being used by these media centers include Follet (153 buildings), Winnebago (133), and Athena (85).

To get a sense of what technologies are available to teachers and students, item 22 asked buildings to report the total number of rooms and then number of rooms equipped with different technology resources. Resources included having telephone access, being wired for Internet, having at least one multimedia computer, having at least one computer with dedicated (high speed) connection to the Internet, and having a complete teacher workstation that includes an Internet-connected computer, a dedicated projection device (a LCD panel or some type of video projector) and access to a printer. Table 16 provides a snap shot of building technologies in computer labs, instructional rooms, and library media centers for the years 1998, 2000, and 2002.

In 2002, 90 percent or greater of the computer labs are wired for Internet and are equipped with at least one multimedia computer and at least one computer connected to the Internet. Over half of the labs have telephone access; less than half have a complete teacher workstation.

The library data somewhat parallel the computer lab data, as over 85 percent are wired and have at least one multimedia and one Internet-connected computer. However, libraries have greater telephone access than the labs; a smaller percentage of libraries have complete workstations as compared to computer labs.

While classroom data have increased substantially over the years, they continue to lag behind other instructional rooms in some categories. By 2002, the rate of classrooms wired for Internet matched the percentage of labs wired, and at least three-fourths of all classrooms have multimedia and Internet-connected computers. However, only half of the classrooms and classroom teachers have telephone access, and only one in five teachers has access to a complete workstation.

Table 16

Status of Specific School-Building Technologies 1998*, 2000*, and 2002									
	Computer Labs			Instructional Rooms			Library / Media Centers		
	1998	2000	2002	1998	2000	2002	1998	2000	2002
Number of Rooms	2,159	3,042	3,303	47,495	53,223	55,142	1,631	2,050	2,148
▶ With Telephone Access	Na	Na	61%	Na	Na	49%	Na	Na	85%
▶ Wired for Internet Access	77%	92%	96%	56%	82%	96%	Na	95%	93%
▶ With a Multimedia Computer	Na	88%	91%	Na	67%	85%	Na	90%	88%
▶ With an Internet-connected computer	Na	83%	86%	Na	61%	79%	Na	82%	84%
▶ With a Teacher Workstation	36%	40%	43%	10%	14%	18%	39%	32%	27%

* Data prior to 2001 are adjusted, to estimate the entire population.

Data from item 23 indicate a total of over 190,000 multimedia computers and over 205,000 Internet-connected

computers. Over 91 percent of each computer type can be found in the three instructional rooms. If statistics for all buildings are relative, then each classroom in 2002 has just 1.8 multimedia and 1.8 Internet-connected computers. The computer labs average 21 Internet-connected computers and 19 multimedia computers; libraries average seven of each type.

Item 24 asked buildings to report the numbers of a variety of other technology-related equipment located in the schools. Table 17 lists these technologies according to data collected in 1998, 2000, and 2002. As the table shows, buildings use a great number of TV monitors, VCRs, printers, and computer storage systems. Overall, buildings have more printers than any other equipment, outside of computers. Except for dot matrix printers, the numbers of printers, by type, have more than doubled since 1998. And, except for the drop in the ranking of dot matrix printers, the overall rankings are similar for each year reported. The only other technologies to show any decrease in numbers include cable TV, assistive/adaptive devices, scientific calculators, and satellite receivers.

Table 17

Building Technologies, 1998, 2000 and 2002						
	1998		2000		2002	
	Number	Rank	Number	Rank	Number	Rank
TV Monitors	24722	1	38475	1	42032	1
Inkjet Printers	16446	3	33786	2	41619	2
VCR Units	20756	2	32608	3	36084	3
Total Color Printers	11752	5	28621	4	35849	4
CD-ROM Network	10116	8	21651	6	26838	5
Graphing Calculators	10491	6	20334	7	24244	6
Scientific Calculators	10194	7	21919	5	21494	7
Cable TV	10094	9	18704	8	17234	8
Laser Printers	5137	10	10251	10	14560	9
Computer Projection Devices	2911	11	5750	11	9819	10
Alpha Smart/Laptop Processors	2243	13	4979	13	7110	11
Dot Matrix Printers	13889	4	15031	9	6196	12
Laserdisc Players/DVD	2971	12	5026	12	5849	13
Scanners/Digitizers	1950	14	4332	14	5848	14
Digital Cameras	1187	16	3025	15	5205	15
Fax Machines	1380	15	2165	16	2775	16
Interactive Whiteboards	N/a	-	462	21	1989	17
Interactive Television	434	19	577	20	1240	18
Assistive/Adaptive Devices	378	20	1190	17	1095	19
Probeware	793	18	1102	19	1121	20
Video Distribution Systems	N/a	-	N/a	-	963	21
Personal Digital Assistants	N/a	-	N/a	-	925	22
Satellite Receivers	880	17	1171	18	864	23

Internet Connectivity / Distance Learning

This section of the COT deals with interconnectivity issues. Items 25 through 27 address building Internet connectivity, local and wide area networking, distance learning technologies, and policies regarding Internet use and filtering software.

Table 18 profiles the data reported since 1999 regarding Internet access. Except for data reported in 2001, an increasing percentage of school buildings have access to the Internet through a dedicated, direct connection. Fewer districts rely on dial-up access for administrators and/or teachers. 1945 buildings have Internet through MOREnet. 1666 or 86 percent have bandwidth connections equal to a T1 or faster. In 2001, 1500 buildings reported having T1 or higher capacity, as compared to 22% in 2000 and 24% in 1999.

Table 18

Building Internet Access, 1999-2002				
	1999	2000	2001	2002
<i>Buildings that report having:</i>				
▶ Internet Access	95%	97%	79%	97%
▶ Dedicated Connection	83%	89%	73%	91%
▶ Dial-up Access	24%	22%	10%	12%

Table 19 shows the status of networking in the buildings, 1999 to 2002. Again, except for the dip in figures reported in 2001, data indicate that increasing numbers of schools have local area networks and are connected to other buildings in their districts through wide area networks. If all data are relevant, buildings average 1.64 servers that connect just over 97 computers. Novell is the predominant operating system (running on 3685 servers), followed by Windows NT (1717), and Apple Share (581). Between 600 and 800 servers run email (790), filtering (711) and the Web (661); over 500 run a firewall (576); and, between 300 and 400 run proxy servers (378) and FTP (306).

Table 19

Building Networking, 1999-2002				
	1999	2000	2001	2002
<i>Buildings connected via:</i>				
▶ Local Area Network	87%	91%	72%	91%
▶ Wide Area Network	62%	67%	59%	72%

Table 20 indicates the distance learning technologies available at the building level. Item 32 asked whether students in the building participated in classes originating from a remote site. Other than the number of buildings using interactive distance learning (I-TV) which has stayed relatively the same, fewer buildings use cable television, satellite, and desktop technology. Over 300 buildings, however, stated on Item 33, that they plan to have distance learning programs available within the next two years.

Table 20

Distance Learning Technologies, 1999-2002				
	1999	2000	2001	2002
<i>Buildings that Participate in Distance Learning via:</i>				
▶ Cable Television	25%	25%	12%	13%
▶ Interactive Distance Learning	11%	13%	9%	11%
▶ Desktop/Internet Videoconferencing	25%	9%	6%	10%
▶	17%	16%	7%	8%

Table 21 illustrates how buildings deal with Internet access issues. Items 34 through 36 asked buildings whether they require parent signatures for student access to the Internet, whether students must sign acceptable use policies (AUP), and whether the buildings use Internet filtering software. Responses indicate that increasing numbers of buildings are initiating policies and procedures for safe student access to the Internet. Partially, the increases can be attributed to the Universal Service Fund's E-rate Program that requires filtering software and board approved policies regarding appropriate student access. In 2002, the most frequently used filtering software programs are: Cyber Patrol (used by 516 buildings), Boarder Manager (316), Sonic Wall (211), WebSense (205), Screen Door (183), and X-Stop (152).

Table 21

Internet Safety Policies and Procedures, 1999-2002				
		2000	2001	2002
Buildings requiring parent signatures	75%	80%	56%	85%
Students signing AUPs	58%	67%	59%	70%
Buildings using filtering software	42%	55%	45%	81%

Technology Usage

The remaining COT items (37- 44) address how building faculty, staff, and students use the education technologies available, who helps with technology integration, and how technology is used to inform and communicate with others.

After a noticeable dip in 2001, technology usage data rebounded substantially in 2002. As tables 22, 23, and 24 indicate, technology usage data are the highest ever reported -- for almost every category and user type. The third cycle of the Missouri School Improvement Program (MSIP), which began in 2001-2002, started requiring districts to report these and similar data. Likewise, the updated (and much more rigorous) scoring guide used for state approval of district technology plans went into effect in 2002. Both of these accountability measures factor in the analysis.

Table 22 details technology usage for school building principals, in terms of the technologies they routinely use and the functions for which they use technology. As the data tables show, principals are heavy users of email and the Web. Only about one-third of principals routinely use educational software, and less than a fourth routinely use online resources -- which is easily explained, as they do not typically carry a teaching load. Likewise, principals are more apt to use technology for research, writing, email, and student data manipulation than for curriculum and instruction. Areas where principals show the greatest increase since 1999 include the usage of email and the Web and using technology for computer-generated presentations and tracking student performance.

Table 22

Routine Use of Technology by Building Principals, 1999-2002				
<i>Principals who Routinely Use the Following Resources:</i>	1999	2000	2001	2002
▶ Educational Software	37%	39%	34%	36%
▶ Electronic Mail	77%	85%	74%	92%
▶ World Wide Web	69%	78%	71%	86%
▶ EBSCO Host or other Database(s)	21%	25%	24%	24%

▶ Electronic Encyclopedia	21%	22	22%	19%
▶ Electronic/Automated Library Catalog	Na	Na	Na	23%

Principals who Routinely Use Technology for the Following Functions:

▶ Computer-generated Presentations	26%	29%	31%	43%
▶ Writing Assignments	65%	68%	56%	67%
▶ Research Information Collection	57%	62%	58%	69%
▶ Communicate with Parents & Students	53%	58%	48%	63%
▶ Lesson Plan Preparation	8%	9%	13%	14%
▶ Spreadsheet/Database (student records)	61%	66%	60%	71%
▶ Track Student Performance	49%	54%	56%	67%
▶ Assess Student Performance	Na	Na	Na	58%
▶ Delivery of Instruction & Presentations	13%	18%	21%	28%

Table 23 illustrates teacher usage of technology. Four out of five teachers routinely use email and Web resources; about three in four are routine users of educational software; and, less than half use online encyclopedia and databases or electronic library catalog. Just over 70 percent of teachers typically use technology for writing, while 60-70 percent use it for research information collection and keeping track of student performance, and 50-60 percent use technology for lesson preparation, keeping spreadsheets or databases, and assessing student performance. Only two out five teachers routinely use technology for the delivery of instruction or instructional presentations.

Table 23

Routine Use of Technology by Building Teachers, 1999-2002				
<i>Teachers who Routinely Use the Following Resources:</i>	1999	2000	2001	2002
▶ Educational Software	69%	72%	59%	71%
▶ Electronic Mail	60%	69%	65%	82%
▶ World Wide Web	61%	69%	67%	82%
▶ EBSCO Host or other Database(s)	25%	29%	27%	31%
	41%	45%	36%	38%

▶ Electronic Encyclopedia				
▶ Electronic/Automated Library Catalog	Na	Na	Na	46%
<i>Teachers who Routinely Use Technology for the Following Functions:</i>				
▶ Computer-generated Presentations	20%	24%	29%	37%
▶ Writing Assignments	62%	66%	60%	71%
▶ Research Information Collection	54%	59%	56%	67%
▶ Communicate with Parents & Students	41%	46%	39%	53%
▶ Lesson Plan Preparation	42%	47%	45%	59%
▶ Spreadsheet/Database (student records)	40%	45%	46%	56%
▶ Track Student Performance	47%	52%	48%	61%
▶ Assess Student Performance	Na	Na	Na	55%
▶ Delivery of Instruction & Presentation	20%	26%	29%	38%

Table 24 depicts student usage of technology. Of all user groups, students are the most likely to use educational software – at 75 percent compared to 71 percent of teachers. Likewise, students use automated library services more frequently than other groups – at 52 percent compared to 46 percent for teachers and 23 percent for principals. While more students routinely use technology more than they did in 1999, they lag behind teachers and administrators.

Table 24

Routine Use of Technology by Building Students, 1999-2002				
<i>Students who Routinely Use the Following Resources:</i>	1999	2000	2001	2002
▶ Educational Software	76%	78%	62%	75%
▶ Electronic Mail	13%	15%	11%	14%
▶ World Wide Web	50%	55%	52%	63%
▶ EBSCO Host or other Database(s)	22%	25%	22%	27%
▶ Electronic Encyclopedia	41%	45%	36%	38%
▶ Electronic/Automated Library Catalog	Na	Na	Na	52%

▶ Computer-generated Presentations	18%	22%	23%	32%
▶ Writing Assignments	58%	61%	52%	65%
▶ Research Information Collection	52%	57%	49%	59%

Table 25 presents response related to item 39 that asked who is responsible for technology integration in the building. For every year, 1999-2002, that function is typically the charge of a district or building technology coordinator. After technology staff, school administrators, and library media specialists are responsible.

Table 25

Building Staff Responsible for Technology Integration, 1999-2002				
	1999	2000	2001	2002
Technology Coordinator	65%	75%	65%	94%
School Administrator	54%	63%	57%	64%
Library/Media Specialist	36%	42%	37%	43%
RPDC	9%	12%	9%	10%
Outside Vendor	6%	7%	8%	10%
Instructional Technology Specialist	Na	Na	Na	30%
Teacher	Na	Na	Na	37%

Note that early census forms did not have “teacher” as a response. It was added in 2002 after it was noted as a common listing under “other” in 2001. The same is true for “instructional technology specialist.” An increasing practice is for buildings to have both technical and instructional assistance available. In the past, it was common for buildings to hire one person to fulfill both duties. Now, schools are building capacity for assistance that is more instructional in nature.

Item 40 was added to the census in 2001 to determine the percentage of teachers who are able to fully integrate technology into curriculum and instruction. Full integration is defined as the ability to use instructional strategies that promote authentic project-based learning opportunities, student teamwork, collaboration and communication using technology in the classroom curriculum. Full integration is the goal of the eMINTS professional development program. In 2002, buildings report that 44 percent of their teachers are able to fully integrate technology, as compared to 33 percent in 2001. A typical building (median) reports a 40 percent rate.

Item 41 asked about a building's use of a website. In 2002, over 1,500 buildings report posting teacher and school information on the Web, as compared to 1,300 buildings in 2001. About half of the buildings also post community information, which is similar to last year.

Item 42, added in 2002, asked whether the school building had a technology-mediated feedback system. Over 948 buildings (45%) indicating yes, 822 use email, 546 have voice mail, 221 have a telephone-based homework hotline, 179 use an automated absentee calling system, and 62 have a Web-based homework hotline.

In 2001, an item was added to determine the typical Web browser. About two thirds of Internet-connected computers in 2002 use Internet Explorer 5.0 or later, as compared to only 38 in 2001. About the same rate have used Netscape 4.6 or higher the past two years – 27 percent in 2002 compared to 28 percent in 2001.

Item 44 was added in 2002 to determine use of Acrobat Reader, since much of what the Department posts online is in this format. Data indicate over two-thirds of the Internet-connected computers use versions 4.5 (36 percent) or 5.x (35%).

[c1]Can use 4 year graph if desired.

Missouri Department of Elementary and Secondary Education
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The 2002 Missouri School District Computing Census Appendix A

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D. Kent King
Commissioner of Education

Missouri Department of Elementary and Secondary Education
P.O. Box 480
Jefferson City, MO 65102-0480
<http://www.dese.mo.gov/>

N = 524

DISTRICT Level Census

Please complete this census form to reflect building status as of **March 1**.

Contact Name:	Contact Title:
District Telephone #:	District Fax #:
Contact E-mail:	District URL:

PLANNING

- 1.) Does your DISTRICT have a technology plan? 515 (98%) Yes 9 no (If no, skip to #2) (N=524)
If yes,
 - A. Does your DISTRICT technology plan cover the following? (Check ALL that apply)

<u>93%</u> Hardware/Peripherals	<u>95%</u> School Computer Software	<u>89%</u> Internal Connections
<u>75%</u> Review Requirement	<u>95%</u> Staff Training	<u>87%</u> Curriculum Integration
<u>92%</u> Maintenance of Equipment	<u>71%</u> External Conditions	<u>57%</u> Capacity of the School's Electrical Wiring
 - B. Is your DISTRICT technology plan for: 5 (0%) 1 year 344 (67%) –4 years 166 (32%) or more years.
(N=515)
Year plan last revised 2001 State approved? 513 (98%) yes 11 (2%) no
- 2.) Who was involved in the DISTRICT decision-making related to technology acquisition and use?
(Check ALL that apply)

<u>86%</u> Technology Team	<u>64%</u> Instructional Technology Director	<u>21%</u> Mgmt. Information Systems Director
<u>81%</u> Library Media Specialist	<u>65%</u> School Board Members	<u>33%</u> Chief Financial Officer
<u>45%</u> Curriculum Director	<u>90%</u> Superintendent	<u>85%</u> Principal
<u>88%</u> Teachers	<u>62%</u> Parents	<u>29%</u> Business Partners
<u>32%</u> Consultants	<u>15%</u> Other (Please Specify) _____	<u>Students 44/8%</u>
- 3.) Is technology a component in the district Comprehensive School Improvement Plan (CSIP)?
512(98%)yes 12 no (N=524)
- 4.) Does your DISTRICT "partner" with a business or higher education institution to support technology?
142 (27%)yes 382 (72%)no
If yes, who? college/university (77) technology-related business (36) other business (14)

TRAINING

- 5.) Who is responsible for technical maintenance and/or support of hardware in your district?
(Check ALL that apply) (N=517)
3% Parents/community members 83% District staff 26% School classified staff 21% Contractors agreement
5% Regional centers/RPDC's 64% Outside vendors 53% School certified staff 17% Students 0 No One
- 6.) If you were to receive technical assistance for educational technology, what would your training priorities for the person(s) in # 5 be? (1=high 2=medium 3=low)
1=39% 2=47% 3=14% Technology Planning 1=39% 2=40% 3=21% Networking
1=70% 2=24% 3=6% Curriculum Integration 1=25% 2=41% 3=34% Basic Operations
1=26% 2=57% 3=17% Information Systems 1=21% 2=47% 3=32% Procurement
1=69% 2=25% 3=7% Instructional Integration 1=20% 2=52% 3=29% Budget Planning
1=17% 2=59% 3=24% Community Awareness
- 7.) Does the district have board-approved education technology standards?
322 (62%) yes 195 (38%) no (N=517)
 If yes, 307 (59%) Locally-developed 70 (13%) ISTE 29 (6%) ITEA 17 (3%)
 Other Please specify Show-Me 7/1%
 Populations: 307 Elementary Students 237 Teachers
283 Middle/Junior Students 223 School Administrators
258 High Students 210 Staff
128 Vocational-Technical Students
- 8.) Are your teachers required to demonstrate technology skills for employment or continued employment with your DISTRICT? 44 (9%) yes 473 (91%) no (N=517)
 If yes, how are they evaluated? (Check ALL that apply) 15 Recruitment and Selection Process
11 Transcripts 21 Hands-on Evaluation 30 Professional Development Hours
- 9.) Please estimate the percentage of Administrators in your administrative building/district office(s) at each level in the use of technology.

	Beginner %	Intermediate %	Advanced %
Administrators	6,653 (13%)	33,337 (65%)	11,332 (22%)

HARDWARE & SUPPORT

- 10.) Please estimate the total number of FTE responsible for technical maintenance and support of hardware?
986 (1.88 average) District-Level staff 854 (1.63 average) School-Level staff
- 11.) Please identify the number of computers, by type, that are currently in use in your administrative building/administrative office(s):

Apple/Mac	Number of Computers	PC Compatible	Number of Computers	
Apple 68030 or earlier	116	386 or earlier	216	
MAC 68040	372	486	1,267	
Power Mac 5500 or higher	488	PENTIUM	3,718	
iMac	1,438	---II	3,859	
		---III	5,295	
		---4	1,061	
		Celeron	1,682	

		AMD	3,887	
Apple/Mac Sub-Total	2,414 (10%)	PC Sub-Total	20,985 (90%)	Total = 23,399

12.) Please identify the number of computer monitors by screen size in use in the administrative building/office(s).
0 Smaller than 15" 1,352 15" 7,344 17" 8,696 Larger than 17"

13.) How many of these personal computers are running:

PC	Number of Computers	Mac	Number of Computers	
Windows 3.1	110	OS 7.x	400	
Windows 95	3,461	OS 8.x	401	
Windows 98	9,354	OS 9 or later	1,464	
Windows 2000/Me	1,596			
Windows XP	180			
Windows NT 3.x	19			
Windows NT 4.x	487			
Novell 4.x or earlier	756			
Novell 5.x	1,399			
Novell 6.x	27			
Unix/Linux	85			
PC Sub-Total	17,474 (89%)	Mac Sub-Total	2,265 (11%)	Total = 19,739

14.) Regarding your technology plan, how many computers will be purchased for the administrative building/administrative office(s)?

PC This school year? 1,151 Next year? 1,263 Future years? 1,993
Mac This school year? 76 Next year? 97 Future years? 120

15.) Please estimate how many of the following your district plans to purchase FOR YOUR SCHOOL BUILDINGS in the next 2 years.

Interactive Whiteboards 1,451 Computer Projection Devices 1,776
Computers 39,516 Computer Upgrades 13,216

INTERNET CONNECTIVITY-DISTANCE LEARNING

16.) Does the administrative building/administrative office(s) have a dedicated connection to the Internet (i.e., dedicated Connection – NOT a Dial-up)? 486 (93%) yes 7% no (N=524)

If yes, what is the bandwidth capacity?

14 56-256kb 10 384-768kb 436 T1(1.5-6mb) 5 10-45mb 9 OC1 or greater 8 Don't know
2 Other (please specify) cable modem (1), dial-up (1)

17.) Does the administrative building/administrative office(s) have a local area network (LAN)?

459 (88%) yes 13% no

(N=524) If yes,

A. How many total computers are connected to the LAN? 31,357

B. How many of the above computers are servers? 1,179 (4%)

C. What operating system does your server(s) use? (Check ALL that apply and indicate how many.)

11 Linux (how many) 441 Windows NT (how many)

148 Apple Share (how many) 643 NOVELL (how many)

147 Other (Please Specify) Windows 2000 (44), other Windows(3), Unix (3), AS400 (3), other Apple/Mac (3)

18.) How many school buildings currently connected by a Wide Area Network (WAN) to the administrative building/office(s)? 1,811 (80%) (N=2098)

- 19.) How many school buildings are not currently connected by a Wide Area Network (WAN) to the administrative building/office(s)? 287 (14%) (N=2098)
- 20.) Does the administrative building/administrative office(s) have at least one office equipped for two-way interactive audio/video communications with other locations? 38 (8%) yes 476 (91%) no (N=514)
- A. If yes, check ALL that apply
30 Full motion video capability 13 Compressed video capability
- B. If yes, how many of the following video links are there in your district buildings?
12 One-way video with two-way audio or PC link 68 Two-way video and audio
- 21.) Does your district require parents' signature before students can access the Internet?
482 (92%) yes 42 (9%) no (N=524) (Indicate yes with a check)
84% Elementary 88% MS/Jr. High 78% High School

TECHNOLOGY USAGE

- 22.) Has your district incorporated technology into your curriculum guides and academic standards? 463 (89%) yes 50 (10%) no (N=513) If yes, in what percentage of your core content areas? 60% (median response)
- Does your district have any technology proficiency requirements for your students to pass to the next level?
79 (15%) yes 434 (85%) no (N=513)
- 23.) What DISTRICT information can be accessed from an outside location via the Internet?
 (Check ALL that apply) (N=513)
67% District calendar 49% School Board members 19% School Board agenda and minutes
64% District staff 28% District newsletter 18% District curriculum/course descriptions
23% Student work 51% Annual report of school district data 24% Classroom Curriculum/Homework
21% Other (Please Specify) sports/activities (22), menu (15), policies (10), announcements (9),
employment (8), CSIP/other plans (8)
- 24.) Does the district employ an instructional technology director/coordinator?
380 (74%) yes 133 (26%) no (N=513)
- 25.) Please estimate the total staff FTE responsible for the training and the support of teachers in integrating the use of technology into curriculum and instruction.
 District-Level staff # 1075 (2.05 Average) School-Level staff # 984 (1.84 Average)
- 26.) Please indicate the total number of e-mail accounts provided by the district for each user group.

User Group	Number of e-mail Accounts
Students	49,794 (6%)
Teachers	61,535 (95%)
Administrators	7,109 (55%)

- 27.) Please estimate the percent of the district's 6th graders who are computer literate (able to perform basic computer operations)? 100% Median Response and 86% Average Response (N=513)
- 28.) Does the district have its own e-mail server or does it plan to install one?
367 (71%) yes 146 (28%) no (N=513)
 If yes, what e-mail software do (or will) you use? Groupwise (79) Mercury (77) Pegasus (53)
Exchange/Outlook (47) Eudora (21)
- 29.) Does your district have its own web server or does it plan to install one?
330 (63%) yes 183 (35%) no (N=513)

If yes, what web software do (or will) you use? Apache (54) IIS (42) Enterprise web-server (36) Frontpage (30)

30.) Does the district have it own proxy server or plan to install one? 241 (46%) yes 272 (52%) no (N=513)

If yes, what proxy software do (or will) you use? Border Manager (82) MS Proxy (3)

31.) Does the district have its own firewall or plan to install one? 362 (70%) yes 151 (29%) no (N=513)

If yes, what firewall software do (or will) you use? Border Manager (107) Sonic Wall (54)

32.) Does the district have a URL? 385 (75%) yes 123 (24%) no (N=508)

Technology Funding

33.) Amount for which items were purchased or budgeted: (please round to the nearest \$100) (N=500)

Items Purchased or Budgeted	Last Fiscal Year	Current Fiscal Year	Next Fiscal Year
Computer and peripheral hardware (modems, printers, CD-ROMs)	\$40,900,483	\$49,353,122	\$35,378,496
Instructional software for classroom use	\$5,715,504	\$5,743,140	\$5,015,277
Professional development for educational technology	\$4,295,303	\$5,360,525	\$5,312,867
Distance learning (cable TV, satellite, etc.)	\$2,104,837	\$1,938,977	\$2,044,804
Server and/or support	\$8,153,149	\$9,355,309	\$9,292,877
Remaining/other	\$4,633,695	\$12,311,466	\$8,711,502
Totals	\$65,802,971	\$84,062,539	\$65,755,823

34.) What percentage of the district's technology budget is used to provide or support technology professional development?

12% Median Response and 14% Average Response (N=499)

35.) Did your district apply for the E-rate discount for the current 12-month period of July 1 through June 30?

337 (65%)yes 162 (31%)no (N=499)

If yes, what is the estimated value of your discount? \$ 50,706,062 (Average \$150,463) what percentage used to support education technology 0 % Median Response and 36% Average Response

36.) Has your district purchased technology products or services off the Missouri Prime Vendor Contract?

92 (18%)yes 407 (78%)no (N=499)

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The 2002 Missouri School District Computing Census Appendix B

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D. Kent King
Commissioner of Education

Missouri Department of Elementary and Secondary Education
P.O. Box 480
Jefferson City, MO 65102-0480
<http://www.dese.mo.gov/>

N = 2128

SCHOOL Building Census Form

Please complete this census form to reflect building status as of **March 1**.

It is recommended that you make a copy of the completed census for your files.

If you have questions, please call (573) 751-8247 or e-mail: instrtech@dese.mail.mo.gov

Contact Name:	Contact Title:
School Telephone #:	School Fax #:
Contact E-mail:	School URL:

PLANNING

- 1.) Does your school building have a technology plan?
1819 (85%) yes 309 (15%) no (If no, skip to #2) (N=2128)
 If yes,
 - A. Is the school building technology plan part of the district plan? 1783 (84%) yes 345 (16%) no
 - B. Does your School building technology plan cover the following? (Check ALL that apply)
82% Hardware/Peripherals 79% School Computer Software 66% Internal Connections
55% Review Requirement 81% Staff Training 76% Curriculum Integration
75% Maintenance of Equipment 48% External Conditions 43% Capacity of the School's Electrical Wiring
29% Assistive Technology Devices and Services
 - C. Is your district technology plan for: 6% 1 year 64% 2 –4 years 31% 5 or more years. (N=1819)
 Year plan last revised 90% in the last 3 years
- 2.) Who was involved in developing, implementing and evaluating the school building technology plan?
 (Check ALL that apply)
87% Technology Team 42% Curriculum Staff/Consultant 89% Principal
86% Teachers 55% Instructional Technology Contact 32% Business Representatives
53% Parents 73% Library Media Specialist 14% Other (Please Specify)
Students (145) District Technology Staff (56) District Administrators (39) School Board (31)
- 3.) Does your school building have a Comprehensive School Improvement Plan (CSIP)?
1983 (93%) yes 145 (7%) no
 If yes, is technology a component? 1913 (96%) yes 4% no N=1983
- 4.) Does your school "partner" with a business or higher education institution to support technology?

548 (26%)yes 1580 (74%)no

If yes, who? College/University (257) Tech-related Business (167) Other Business/Industry (113)
Public Entity (40)

TRAINING

5.) Who is responsible for technical training and/or support of staff in your school building?

(Check ALL that apply)

44% District Staff 34% School Classified Staff 63% School Certificated Staff
39% Outside Vendor(s) 12% Contractors Agreement 16% Regional Centers/RPDC's
8% Students 2% Parents/Community Members 0% No One

6.) Does the school building employ a technology director/coordinator? 918 (43%) yes 1210 (57%)no

7.) Please estimate the number of staff FTE responsible for technical training and support needs of you school building's staff.

District-level staff 7903 total (3.71 Avg) Building-level staff 2497 total (1.17 Avg)

8.) Please rank your educational technology training priorities for this school building's faculty.

(1=high 2=medium 3=low)

1=42% 2=38% 3=20% Basic Computer Operations 1=21% 2=46% 3=33% Hypermedia Operations
1=28% 2=56% 3=16% Evaluating INTERNET Information 1=41% 2=39% 3=20% Word Processing
1=24% 2=42% 3=34% LAN Applications/Resources 1=56% 2=35% 3=8% Instructional Delivery Strategies
1=45% 2=46% 3=9% INTERNET Applications 1=58% 2=34% 3=8% Curriculum Development w/Education Tech.
1=12% 2=45% 3=43% Assistive technology training 1=25% 2=43% 3=32% Electronic/Automated Library Catalog
1=18% 2=49% 3=33% Electronic Periodical Database 1=78% 2=18% 3=4% Other (Specific software such as SIS)

9.) Please rank the professional development needs of the school building's technical support staff?

(1=high 2=medium 3=low)

1=36% 2=45% 3=20% Technology Planning 1=24% 2=40% 3=36% Network/Wiring
1=24% 2=41% 3=35% Procurement 1=53% 2=35% 3=12% Curriculum Integration
1=23% 2=44% 3=32% Budget Planning 1=22% 2=49% 3=29% Database Management
1=25% 2=47% 3=27% Community Awareness/PR 1=31% 2=43% 3=27% LAN Applications
1=21% 2=39% 3=40% Distance Learning 1=59% 2=15% 3=35% Other (Specific software such as assistive technology)

10.) How many hours per school year does your school building offer or schedule professional development to upgrade technology and computer skills in the following areas? (N=2128)

Training	Administrators	Teachers
Introductions to Operations	5.38 Hours	7.64 Hours
Using Software Applications	10.77 Hours	14.70 Hours
Using Internet Resources	6.36 Hours	9.39 Hours
Curriculum Integration	7.06 Hours	10.79 Hours
Teaching Applications	6.24 Hours	3.91 Hours
Using Assistive Technology Devices	2.09 Hours	2.75 Hours

11.) Are your teachers required to demonstrate technology skills for employment or continued employment with your school? 70 (3%) yes 2058 (97%) no

If yes, how are they evaluated? (Check ALL that apply) 160 Recruitment and Selection Process
102 Transcripts 163 Hands-on Evaluation 209 Professional Development Hours 57 Other (Please Specify) Observation/Evaluation (30) Training/Inservices (15) Self-evaluation (9)

12.) Please estimate the percentage of principal(s), teachers, and technological support staff in your school building in each skill level in terms of their use of technology.

Principal N=1028; Teacher N=1631; Staff N=858

Faculty/Staff	Beginner %	Intermediate %	Advanced %
Principal(s) M=514	18%	60%	22%
Teachers M=815	24%	58%	18%
Technology Support Staff M=429	4%	30%	66%

13.) During the current school year, how many days has your school scheduled for professional development activities where teachers can learn/upgrade their technology and computer skills? 3437 (Avg. 1.62)

14.) Compared to the last school year, do you think the number of scheduled professional days for technical training will:

24 (4%) Decrease 323 (53%) Remain the same 259 (43%) Increase N=606

HARDWARE AND SUPPORT

15.) Who is responsible for technical maintenance and/or support of hardware in your school building?

(Check ALL that apply)

90%District Staff 30%School Classified Staff 43%School Certificated Staff
1%Parents/Community Members 49% Outside Vendors 2% Regional Centers/RPDC's
9% Students 10% Contractors 0% No one

16.) Please estimate the number of staff FTE responsible for technical maintenance and support of hardware in your school building. 1335 (Avg. .63)

17.) Please identify the number of computers by type that are currently in use in the following locations within your school building:

Apple/Mac	Computer Labs	Instructional Rooms	Library/Media Center	Principal Office(s)	Other Locations	Total
Apple 68030 or earlier	901	3,164	147	32	300	4,544
MAC 68040	1,811	5,768	379	86	587	8,631
Power Mac (5500 or higher)	2,506	7,315	801	165	704	11,491
IMac	8,876	10,690	1,441	301	933	22,241
Apple/Mac Sub-Total						46,907

PC Compatible	Computer Labs	Instructional Rooms	Library/Media Center	Principal Office(s)	Other Locations	Total
386 or earlier	526	1,265	138	17	191	2,137
486	1,969	4,612	524	127	564	7,796
PENTIUM	14,092	23,201	3,262	1,246	2,637	44,438
---II	18,355	23,102	4,502	2,274	2,907	51,140
---III	19,243	24,689	4,079	2,640	3,329	53,980

---4	3,184	4,551	522	369	491	9,117
Celeron	5,910	8,475	1,382	586	940	17,293
AMD	0	0	0	0	0	
PC Sub-Total						185,901

Total= 232,808

18.) Please identify the number of computer monitors by screen size in the school building.

20672 Smaller than 15" 164773 15" 39123 17" 1400 Larger than 17"

19.) How many of these personal computers in your school building are running the following:

PC	Number of Computers	Mac	Number of Computers
Windows	183,044	OS	45,274
Windows 3.1	3,127	OS 7.x	10,466
Windows 95	59,030	OS 8.x	11,795
Windows 98	100,608	OS 9 or later	23,013
Windows 2000/Me	16,153		
Windows XP	1,042		
Windows NT 3.x	237		
Windows NT 4.x	2,847		
Novell	26,235		
Novell 4.x or earlier	7,956		
Novell 5.x	16,561		
Novell 6.x	1,718		
Unix/Linux	947		

20.) Please indicate the number of computers in your school building that are multimedia equipped:

Mac_38,208_____ PC_156,073_____

21.) Is the library media center catalog in the school building completely automated?

473 (22%)_yes 1655 (78%)_no

If yes, what product? Follet (153) Winnebago (133) Athena (85) Alexandria (25) Calico (24)
Sagebrush-Spectrum (16)

22.) Please indicate the number of ROOMS in the following locations, within your school building:

Number of ...	Computer Labs	Instructional Rooms	Library/Media Center	Principal Office(s)	Other	TOTAL
a. Rooms total	3,303	55,142	2,148	4,665	10,210	75,468
b. Rooms with telephone access	2,023	27,090	1,835	4,563	8,303	43,814
c. Rooms wired for the Internet	3,183	50,923	2,007	4,423	8,210	68,746
d. Rooms with one or more multimedia equipped computers	3,003	46,762	1,900	3,965	6,759	62,389

e. Rooms with one or more multimedia equipped computers with direct connection to the Internet	2,830	43,716	1,807	3,782	6,415	58,550
f. Rooms with one or more multimedia equipped computers with direct connection to the Internet, access to a printer and a dedicated projection device	1,418	10,145	580	398	930	13,471

23.) Please indicate the number of computers in the following location, within your school building.

Number of ...	Computer Labs	Instructional Rooms	Library/Media Center	Principal Office(s)	Other	TOTAL
COMPUTERS connected to the Internet	69,412	102,006	15,613	7,573	10,464	205,068
COMPUTERS multimedia equipped	63,492	96,499	14,156	6,715	9,491	190,353

24.) Please report the number of units/systems in your school building.

A. CD-ROM Network	26,838	I. Computer Projection Devices	9,819	Q. Probeware	1,121
B. Laserdisc Players/DVD	5,849	J. Dot Matrix Printers	6,196	R. Fax Machines	2,775
C. VCR Units	36,084	K. Inkjet Printers	41,619	S. Alpha Smart/Laptop Processors	7,110
D. TV Monitors	42,032	L. Laser Printers	14,560	T. Interactive Television	1,240
E. Scanners/Digitizers	5,848	M. Total Color Printers	35,849	U. Interactive Whiteboards	1,989
F. Digital Cameras	5,205	N. Graphic Calculators	24,244	V. Satellite Receiver	864
G. Assistive/Adaptive Devices	1,095	O. Scientific Calculators	21,494	W. Cable TV	17,234
H. Personal Digital Assistants	925	P. Multimedia Distribution System	963		

INTERNET CONNECTIVITY-DISTANCE LEARNING

25.) Does your school building have access to the Internet? 2,062 (97%) yes 66 (3%) no

If yes, who is your Internet provider?

(95%) MOREnet (5%) Other (Please Specify) SBC (27) Fidelity (8) MSN (5)

N=2062

26.) Does the school building have a dedicated connection to the Internet? 1941 (91%) yes 187 (9%) no

If yes, what is the bandwidth capacity?

192 56-256kb 102 10-45mb 186 384-768kb 9 OC1 or greater 1,621 T1 (1.5-6mb)

27 Don't know 68 Other (Please Specify) wireless (21) DSL (2)

27.) Does the school building have dial-up links? 257 (12%) yes 1,871 (88%) no

If yes, how many modems, by speed, are in this school building?

3 14.4K 187 28.8K 601 33.6K 959 56K

If yes, who uses the dial-up access? Administrators 123 Teachers 132 Other staff 85

Students 76 Other (please specify) none listed

- 28.) How many dial-up computer lines are available in the school building? 1302
- 29.) If the school building uses dial-up links, where are you dialing to? (Check ALL that apply)
98 District 47 MOREnet 73 Commercial
63 Other (Please Specify) Local fire department (23) Local network(10)
- 30.) Does your school currently have a local area network (LAN)? 1,926 (91%) yes 202 (9%) no
 If yes,
 A. How many computers are connected to the LAN in your school building?
206,988 (97.27 average per school)
 B. Of the above computers, how many are servers? 3,482 (1.64 average per school)
 C. What operating system does your server(s) use? (Indicate how many.)
 Linux (how many) 258 Windows NT (how many) 1,717 Apple Share (how many) 581
 Novell (how many) 3,685 Other (how many) 565 (please specify) Windows 2000 (118)
 D. What services are run on the servers?
711 Filtering 790 Email 306 FTP 378 Proxy Server
661 Web 108 Telnet 576 Firewall
 E. If email is offered, please specify Email software program.
Groupwise (217) MS Exchange/Outlook (135) Pegasus (124) Mercury (104) Eudora (52)
- 31.) Is your school building connected to another school building in your district through a Wide Area Network (WAN)?
1,528 (72%) yes 519 (24%) no 81(4%) N/A
- 32.) Do any of the students in your school building use any of the following to participate in classes originating from remote sites? (Check ALL that apply)
163 Satellite 205 Desktop Technologies/IP/MOREnet 239 Interactive TV (Video Classroom)
285 Cable TV 27 Compressed Video 19 Other (Please Specify) videos (8)
- 33.) If you do not now have any distance learning programs, do you plan on any in the next two years?
312 (15%) yes 1767(83%) no
 If yes, please indicate type IP (78) I-TV (81) Compressed Video (9) Satellite/Cable TV (11)
College/Dual Credit/AP course (17) Foreign Language (26) Field Trips (10) Math/Science (9)
- 34.) Do you require parents' signatures before students can access the Internet?
1,806 (85%) yes 322 (15%) no
- 35.) What percentage of students, in your school building have signed Internet Acceptable Use Policies? 70%
- 36.) Does your school building currently use filtering software on your Internet-connected computers?
1,734 (81%) yes 394(19%) no
 If yes,
 A. On what percentage of your Internet connected computers? 100 % Median Response
 B. What products (for instance, 183 Screen Door, 152 X Stop, 211 Sonic Wall,
316 Border Manager, 516 Cyber Patrol/Surf Control, 49 N2H2, 205 Web Sense,
15 Surf Watch, 363 Other (Please Specify) SquidGuard (72) 3Com (35) Dan's Guardian (30)

TECHNOLOGY USAGE

- 37.) Estimate the percentage of administrators, teachers, and students in your school building who routinely use the following applications.

Applications	Administrator(s) (%)	Teachers (%)	Students (%)
A. Educational Software	36%	71%	75%

B. E-Mail	92%	82%	14%
C. Web-Browsing (Net Surfing)	86%	82%	63%
D. EBSCO host or Other Educational Database	24%	31%	27%
E. Electronic Encyclopedia	19%	38%	41%
F. Electronic/Automated Library Catalog	23%	46%	52%

38.) Estimate the percentage of administrators, teachers, and students in your school building who routinely use the computer for the following functions.

Functions	Administrator(s) (%)	Teachers (%)	Students (%)
A. Computer-generated Presentations	43%	37%	32%
B. Writing Assignments	67%	71%	65%
C. Research Information Collection	69%	67%	59%
D. Communicate with Parents and Students	63%	53%	N/A
E. Lesson Plan Preparation	14%	59%	N/A
F. Spreadsheet/Database (student records)	71%	56%	N/A
G. Track Student Performance	67%	61%	N/A
H. Assess Student Performance	58%	55%	N/A
I. Communicate with DESE Staff	62%	22%	N/A
J. Instructional Delivery and Presentations	28%	38%	N/A

39.) Who is responsible for the leadership and support of teachers in your school building in integrating technology into the curriculum?

68% Technology Coordinator 65% School Administrator 10% RPDC 10% Outside Vendor
38% Teacher 31% Instructional Technology Specialist 43% Library/Media Specialist
10% Other (please specify) Curriculum Staff (63) Computer Technology Staff (33) Technology Staff (26)
Building Technology Staff (16) District Administrators (9)

40.) Estimate the percentage of the school building's teaching staff who are able to fully integrate technology into the curriculum? 44%

41.) What school information can be accessed from an outside location via the Internet?

(Check ALL that apply)
771 Schedules 430 Homework Assignments/Help 80 Report Cards/Attendance
1,090 Community Info. 1,551 Teacher/School Info. 280 Other (Please Specify) Calendars (77)
Newsletter / Announcements (49) Menus (35) Student Activities (34) Board Information (20)

42.) Does the school use a technology mediated feedback system 948 (45%) yes 1180 (55%) no

If yes, 822 Email 179 Automated Absentee Calling System 28 Listservs 546 Voice Mail
224 Homework Hotline via Telephone 62 Homework Hotline via Web 55 Other Web (21)

43.) What percentage of Internet-connected computers in your school building use a web browser at least as current as:

9 % Netscape 4.5 or earlier 27 % Netscape 4.6 or later 66 % Internet Explorer 5.0 or later

11 % Internet Explorer 4.5 or earlier 5 % Other (Please Specify) Opera (7)

44.) What percentage of Internet-connected computers in the building use Acrobat Reader?

3.x 10% 4.x 46% 5.x 44%

[Missouri Department of Elementary and Secondary Education](#)

"Making a positive difference through education and service"

Email: [Education Technology](#)

Phone: 573-751-8247 Fax: 573-522-1134

Last Revised: August 6, 2008

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